CLAIMS

WHAT IS CLAIMED:

1. A method of aligning a substrate, the method comprising:

obtaining first position data indicating a position of a first substrate having a predefined characteristic after an alignment act of said first substrate;

determining a setpoint for aligning a second substrate on the basis of said first position data and said predefined characteristic; and

aligning said second substrate on the basis of said determined setpoint.

2. The method of claim 1, wherein obtaining said first position data includes obtaining an input value of a first variable indicating a motion of said first substrate during the alignment act of said first substrate.

3. The method of claim 1, wherein determining said setpoint of said second substrate includes determining a second variable indicating a motion of said second substrate during an initial phase of aligning said second substrate.

4. The method of claim 1, further comprising obtaining second position data indicating a motion during said aligning of said second substrate.

5. The method of claim 2, wherein said first variable indicates at least a two-dimensional translatory motion.

6. The method of claim 2, wherein said first variable indicates at least one rotary motion.

7. The method of claim 1, further comprising providing a target value for said setpoint, wherein said target value is selected on the basis of said predefined characteristic.

8. The method of claim 7, wherein said setpoint is determined on the basis of said target value.

9. The method of claim 1, further comprising using a linear model relating said first position data and said setpoint to second position data of said second substrate and a previous setpoint used for aligning said first substrate.

10. The method of claim 9, wherein each of said first and second position data comprises at least two degrees of freedom and said relation provided by said linear model is devoid of a mixture of said at least two degrees of freedom.

11. The method of claim 1, further comprising defining said characteristic at least on the basis of a first layer, formed on said first and second substrates and including an alignment mark, and a second layer to be formed on said second substrate.

12. The method of claim 1, wherein said position data is determined from a plurality of first substrates.

13. The method of claim 1, wherein a plurality of second substrates are aligned on the basis of said setpoint.

14. A method, comprising:

obtaining an input value of a first variable indicating a motion of a first substrate during an alignment act of said first substrate;

determining a setpoint for a second variable on the basis of said first variable, said setpoint of said second variable determining a motion of said second substrate during an initial phase of aligning said second substrate; and

aligning said second substrate on the basis of said determined setpoint.

15. The method of claim 14, further comprising:

obtaining a second input value of the first variable of said second substrate, said second input value indicating a motion during aligning of said second substrate; and

using said second input value for determining a setpoint for a third substrate to be aligned.

16. The method of claim 14, wherein said first variable indicates at least a two-dimensional translatory motion.

17. The method of claim 14, wherein said first variable indicates at least one rotary motion.

18. The method of claim 14, wherein said setpoint is determined on the basis of a predefined characteristic of said first and second substrates.

19. The method of claim 18, further comprising providing a target value for said setpoint, wherein said target value is selected on the basis of said predefined characteristic.

20. The method of claim 19, wherein said setpoint is determined on the basis of said target value.

21. The method of claim 14, further comprising using a linear model relating said first input value and said setpoint to a second input value of said first variable indicating the motion of said second substrate and a previous setpoint used for aligning said first substrate.

22. The method of claim 21, wherein said first variable comprises at least two degrees of freedom and said relation provided by said linear model is devoid of a mixture of said at least two degrees of freedom.

23. The method of claim 18, further comprising defining said characteristic at least on the basis of a first layer formed on said first and second substrates and including an alignment mark, and a second layer to be formed on said second substrate.

24. The method of claim 14, wherein said input value is determined from a plurality of first substrates.

25. The method of claim 14, wherein a plurality of second substrates are aligned on the basis of said setpoint.

26. An automatic alignment system, comprising:

a substrate stage configured to receive and hold in place a substrate;

a drive assembly mechanically coupled to said substrate stage and configured to initiate a motion of said substrate stage in response to a control signal; and

a control unit configured to provide said control signal to said drive assembly, and further configured to establish said control signal on the basis of a predefined characteristic of a substrate to be aligned and position data obtained from one or more substrates previously aligned by said alignment tool.

27. A photolithography tool including an automatic alignment tool as defined in claim 26.